

REMARKS

Original Claims 1-28 are pending in this application. Claims 1-5, 15-19, 21, 22, 26 and 27 have been rejected. Claims 6-14, 20, 23-25, and 28 have been objected. Applicants traverse the rejections as follows.

Objected to Claims 6-14, 20, 23-25, and 28

Claims 6-14, 20, 23-25, and 28 have been objected to as being dependent upon rejected base claims, but would be allowable if rewritten in independent form including all of the limitations of the base claims and any intervening claims. Applicant traverses the rejection of the base claims herebelow and thus has not amended the claims at this time. However, the notice of allowability is appreciatively noted.

Rejections of Claims 1, 21, 26 and 17-19 under 35 U.S.C§103(a)

Each of independent claims 1, 21 and 26 are rejected under 35 U.S.C§103(a) as being unpatentable over Kasperkovitz (US 7,072,614) in view of Smith (US 5,444,864).

Claim 1 specifically recites:

a summer operative to receive an input signal having a transmit leakage signal and to receive an estimator signal having an estimate of the transmit leakage signal, to subtract the estimator signal from the input signal, and to provide an output signal having the transmit leakage signal attenuated, wherein the transmit leakage signal corresponds to a portion of a modulated signal being transmitted, wherein the transmit leakage signal corresponds to a portion of a modulated signal being transmitted in a wireless full-duplex communication system; and

an estimator operative to receive the output signal and a reference signal having a version of the modulated signal, to estimate the transmit leakage signal in the input signal based on the output signal and the reference signal, and to provide the estimator signal having the estimate of the transmit leakage signal.

Claims 21 and 26 contain similar language.

None of the references taken alone or in combination teach or suggest the claimed invention. Kasperkovitz (US 7,072,614), is directed to reducing the transmit leakage signal by inverting the phase of the transmit leakage signal by 180 degrees and negatively feeding back of the transmit leakage signals [into the corrective signal means C] (col 2, lines 4-15). In fact, Kasperkovitz teaches away from the claimed invention. The summer pointed out in the Office Action by the PTO, in col 1. lines 27-37, is a summer for a conventional communications device as outlined, for example, in US Pat. No. 5,444, 864 (The Smith Reference) (col. 1, lines 10-12).

However, Kasperkovitz specifically states, “the feedback concept allows to dispense with circuitry introducing unwanted side effects such as a **summer** (emphasis added) (col .2, lines 15-17)”. Hence, the Kasperkovitz invention does not teach or suggest a summer and the signal in the feedback loop is not the output signal out of the summer. As pointed out by the PTO (pg. 3), Kasperkovitz also does not teach or suggest an estimator.

The Smith (US 5,444,864) reference adds nothing. Smith is directed towards cancelling in-band energy leakage from a transmitter to a receiver via use of a signal canceler (12) (see Fig. 1). The output of the summer, $s(t)$, is not fed back into the signal canceler.

Neither Kasperkovitz or Smith show, teach or suggest alone or in combination, an output signal out of a summer sent into an estimator to estimate the transmit leakage signal. Applicant respectfully traverses the rejection and requests that claims 1, 21, and 26 be allowed.

In addition, independent claim 17 and dependent claims 18-19 are rejected under 35 U.S.C§103(a) as being unpatentable over Mo (US 2004/0219884) in view of Smith (US 5,444,864). Mo is directed to measuring receiver I/Q mismatch. Neither Mo or Smith show, alone or in combination teach or suggest an output signal out of a summer sent into an estimator to estimate the transmit leakage signal. Applicant respectfully traverses the rejection and requests that claims 17-19 be allowed.

Rejections of Claims 2-4, 5, 15, 22, 27 and 16 under 35 U.S.C§103(a)

Dependent claims 2-4 are rejected under 35 U.S.C§103(a) as being unpatentable over Kasperkovitz (US 7,072,614) in view of Smith (US 5,444,864) as applied to claim 1 above and further in view of Mo et al.(US 2004/0219884). In light of the above remarks, claim 1 is now believed to be in condition for allowance. As such, Applicant respectfully traverses the rejection and requests that claims 2-4 , which depend on claim 1, be allowed.

Dependent claims 5, 15, 22 and 27 are rejected under 35 U.S.C§103(a) as being unpatentable over Kasperkovitz (US 7,072,614) in view of Smith (US 5,444,864) and further in view of Yedid et al.(US 5,526,377). In light of the above remarks, claims 1, 21 and 26 are now believed to be in condition for allowance. As such, Applicant respectfully traverses the rejection and requests that claims 5 and 15 which depend on claim 1, claim 22 which depends on claim 21, and claim 27 which depends on claim 26, be allowed.

Dependent claims 16 is rejected under 35 U.S.C§103(a) as being unpatentable over Kasperkovitz (US 7,072,614) in view of Smith (US 5,444,864) as applied to claim 1 above, and further in view of Shapira.(US 6,640,111). In light of the above remarks, claim 1 is now believed to be in condition for allowance. As such, Applicant respectfully traverses the rejection and requests that claim 16, which depends on claim 1, be allowed.

CONCLUSION

In light of the remarks contained herein, Applicant submits that the application is in condition for allowance, for which early action is requested.

Respectfully submitted,

Dated 12/22/06

:

By: /Timothy F. Loomis/

Timothy F. Loomis, Reg. No. 37,383
858-845-8355

QUALCOMM Incorporated
Attn: Patent Department
5775 Morehouse Drive
San Diego, California 92121-1714
Telephone: (858) 658-5787
Facsimile: (858) 658-2502